IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re Application of:

Appeal No. _____

WOO-JONG PARK

Serial No.:	09/716,998	Examiner:	MEW, KEVIN D.
Filed:	22 November 2000	Art Unit:	2664

For: ADDRESS SEARCH APPARATUS AND METHOD IN ETHERNET SWITCH

Attn: Board of Patent Appeals & Interferences

TRANSMITTAL OF APPELLANT'S BRIEF FEE

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Sir:

Accompanying this transmittal is a check drawn to the Commissioner of Patents & Trademarks in the amount of $500.00 (Check #49767) for the filing an **Appeal Brief** in support of a Notice of Appeal filed on 24 August 2005. Should the check become lost, be deficient in payment, or should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

Respectfully submitted,

Robert E. Bushnell
Attorney for Applicant
Reg. No.: 27,774

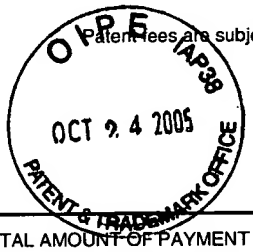
1522 "K" Street, N.W., Suite 300
Washington, D.C. 20005
Area Code: 202-408-9040

Folio: P56257
Date: 10/24/05
I.D.: REB/fw

PTO/SB/17 (08-00)
Approved for use through 9/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL

Patent fees are subject to annual revision.



Complete If Known	
Application Number	09/716,998
Filing Date	22 November 2000
First Named Inventor	WOO-JONG PARK
Examiner Name	MEW, KEVIN D
Group/Art Unit	2664
Attorney Docket No.	P56257

TOTAL AMOUNT OF PAYMENT	($) 500.00

METHOD OF PAYMENT (check one)

1. ■ **Payment Enclosed: (CHECK #49767)**
   ■ Check ❑ Credit Card ❑ Money Order
   ❑ Other

❑ Charge Any Additional Fee Required Under 37 C.F.R. §1.16 and 1.17.

❑ Applicant claims small entity status. See 37 CFR 1.27

2. ■ The Commissioner is hereby authorized to charge any deficiency and credit any over payments to:

Deposit Account Number: 02-4943

FEE CALCULATION

Fee Code	Fee ($)	Fee Code	Fee ($)	Fee Description	Fee Paid
				EXTENSION OF TIME FEES	
1251	120	2251	60	Extension for reply within first month	$
1252	450	2252	225	Extension for reply within second month	$
1253	1020	2253	510	Extension for reply within third month	$
1254	1590	2254	795	Extension for reply within fourth month	$
1255	2160	2255	1080	Extension for reply within fifth month	$
				APPEAL	
1401	500	2401	250	Notice of Appeal	$
1402	500	2402	250	Filing a brief in support of an appeal	$ 500.00
1403	1000	2403	500	Request for oral hearing	$
				CLAIMS	
1201	200	2201	100	Independent claims in excess of 3	$
1202	50	2202	25	claims in excess of 20	$
Other Fee (specify) _____					$
Other Fee (specify) _____					$
Other Fee (specify) _____					$

FEE CALCULATION

Fee Code	Fee ($)	Fee Code	Fee ($)	Fee Description	Fee Paid
				MISCELLANEOUS	
1801	$790	2801	$395	Request for continued examination (RCE)	$
1806	$180			Submission of an IDS	$
1814	$130	2814	$65	Statutory disclaimer	$
1501	$1,400	2501	$685	Utility issue fee (or reissue)	$
1504	$300	1504	300	Publication fee for early, voluntary, or normal publication	$
8021	$40			Recordation of assignment per property	$
				TRADEMARK	
6001/7001			$335	Application for registration, per class	$
6002/7002			$100	Amendment to Allege Use, per class	$
6003/7003			$100	Statement of Use, per class	$
6004/7004			$150	Request for six-month extension of time, per class	$
6205/7205			$100	§8 affidavit, per class	$
6208/7208			$200	§15 affidavit, per class	$
6201/7201			$400	Application for renewal, per class	$
6403/7403			$100	Ex parte appeal, per class	$
				PETITION	
1462			$400	Petitions to Director (Group I)	$
1463			$200	Petitions to Director (Group II)	$
1464			$130	Petitions to Director (Group III)	$
1452	$500	2452	$250	Petitions to revive unavoidably abandoned application	$
1453	$1500	2453	$750	Petitions to revive unintentionally abandoned application	$
				PATENT MAINTENANCE	
1551	$900	2551	$450	Due at 3.5 years	$
1552	$2300	2552	$1150	Due at 7.5 years	$
1553	$3800	2553	$1900	Due at 11.5 years	$
Other Fee (specify) _____					$
Other Fee (specify) _____					$
Other Fee (specify) _____					$

SUBTOTAL: LEFT COLUMN	$500.00	SUBTOTAL: RIGHT COLUMN	$0.00

SUBMITTED BY

Typed or Printed Name	Robert E. Bushnell, Esq.	Reg. Number	27,774
Signature		Date	24 October 2005
		Deposit Account User ID	

Complete (if applicable)

REB/fw

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re Application of:

Appeal No. _____

WOO-JONG PARK

Serial No.: 09/716,998 Examiner: MEW, KEVIN D.

Filed: 22 November 2000 Art Unit: 2664

For: ADDRESS SEARCH APPARATUS AND METHOD IN ETHERNET SWITCH

APPEAL BRIEF as per 37 C.F.R. 41.37

Paper No. 12

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to Appellant's Notice of Appeal filed on 24 August 2005, and in response to the August 9, 2005 Advisory Action maintaining the rejections contained in the February 24, 2005 Final Office Action, Appellant hereby appeals to the Board of Patent Appeals and Interferences from the final rejection of claims 1-3, 5-10 and 12-19.

Folio: P56257
Date: 10/24/05
I.D.: REB/ML/fw

I. REAL PARTY IN INTEREST

Pursuant to 37 CFR §41.37(c)(1)(as amended), the real party in interest is:

Samsung Electronics Co., Ltd.
#416, Maetan-dong, Yeongtong-gu
Suwon-si, Gyeonggi-do, Republic of KOREA

in view of the Assignment executed by the Inventor on November 21, 2000 and recorded in the U.S. Patent and Trademark Office on November 22, 2000 at Reel 011324, Frame 0939.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals and no interferences known to Appellant, Appellant's legal representatives or the assignee which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-3, 5-10 and 12-19 stand finally rejected. Appellant is appealing the final rejection of claims 1-3, 5-10 and 12-19 by this appeal brief. Claims 4 and 11 have been previously cancelled.

IV. STATUS OF AMENDMENTS

The May 24, 2005 Amendment After Final has been **entered** as noted by the Examiner in the August 9, 2005 Advisory Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention pertains to an ethernet switch. In the ethernet switch, there are a plurality of ports (port 0 - port 7 in FIG. 2). Each port has a lookup table storing destination addresses (30 in FIG. 3) for use in forwarding information packets. When a port receives a packet, the port consults the look up table for the destination address. If found, the port forwards the packet to the destination. If not found, the look up table (50 in FIG. 4) in the main search block (26 in FIGS. 2 and 4) is consulted for the destination address. If found in the main search block, the address is sent to the port, the port adds the received address to the look up table in the port and then the port forwards the packet to the destination.

If the main search block also does not have the destination address, the main search block sends a signal called a "no-port" signal to the port informing the port that the main search block also does not have the destination address (Page 10, lines 5-10 and step 145 of FIG. 6). When the port receives this "no-port" signal from the main search block, the port broadcasts the information packet to all of the ports in the switch (page 10, lines 10-15 and step 150 of FIG. 6).

Other features of the present invention include filtering or rejecting packets when the source and destination addresses are the same (page 9, lines 5-10 and step 125 in FIG. 6). Thus, when a port receives a packet, it checks to determine whether the source and the destination addresses are the same (Page 9, lines 3-5 and step 120 in FIG. 6). If they are the same, the port

rejects the packet so that the packet is never forwarded on to the switch (page 9, lines 5-10 and step 125 in FIG. 6).

In the present invention, a hash algorithm is used to search the look up tables for the address (page 7, lines 5-10). The present invention also includes address "learning" where either the main and/or the local port add an address to the look up table (step 143 and step 155 respectively of FIG. 6). Also, a process called "aging" is performed so that addresses that have not been used recently are erased. By doing so, the size of the lookup tables can be minimized thus conserving memory.

Appellant will now present the claims referring to reference numerals, drawings, page and line numbers as per 37 C.F.R. 41.37 (v):

1. (Previously Presented) An address search apparatus in an ethernet switch, said apparatus comprising:

a plurality of ports (port 0 - port 7 in FIG. 2);

a plurality of local search blocks (20-0 - 20-7 in FIGS. 2 and 3) corresponding to each of said plurality of ports, each of said plurality of local search blocks configured to analyze a destination address of an input packet received (105 in FIG. 6, page 6, line 8) in the port thereof and to search for a transmission port (step 110 and 115 in FIG. 6) of said ethernet switch and provide a source address thereof;

a main search unit (26 in FIGS. 2 and 4) configured to analyze said source address to

establish an address data structure (page 6, lines 8-13) of said plurality of local search blocks, said main search unit also configured to respond to a destination address request (130 in FIG. 6) from at least one of said plurality of local search blocks by either providing said requested destination address to a corresponding local search block (page 10, lines 3-5) by using said address data structure when said main search unit has said destination address or by sending a "no port" signal to said at least one of said plurality of local search blocks (145 in FIG. 6 and page 10, lines 7-13), when said main search unit does not have said destination address; and

a scheduler (24 in FIG. 2) for controlling said local search blocks and said main search unit to enable an interface therebetween.

2. (Previously Presented) The address search apparatus according to claim 1, each of said plurality of local search blocks (20-n in FIG. 3) includes:

a destination address table (30 in FIG. 3) having destination addresses and destination information corresponding to said destination addresses which are matched therein;

a source address table (32 in FIG. 3) having source addresses and source information corresponding to said source addresses which are matched therein;

an address sorting logic (34 and 36 in FIG. 3) configured to classify an ethernet address into groups as many as necessary, and corresponding to each of said destination address table and said source address table;

a control logic (38 in FIG. 3) for control of corresponding local search blocks; and

a register unit (40 in FIG. 3) for temporal storage of data.

3. (Original) The address search apparatus according to claim 1, said main search unit (26 in FIG. 4) includes:

an address table (50 in FIG. 4) for storing addresses known to the ethernet switch system and port information corresponding to said addresses;

a table access logic (48 in FIG. 4) for accessing said address table;

an address sorting logic (46 in FIG. 4) for classifying addresses having same characteristics to store data known to the ethernet switch system into said address table; and

a control unit (42 in FIG. 4) for control and condition detection of elements.

Claim 4. (Canceled)

5. (Original) An address search method in an ethernet switch (see FIG. 6 and page 8, line 11 - page 10, line 17), said method comprising the steps of:

determining whether or not a port has received an information packet for transmission (100 in FIG. 6);

reading a destination address from a header of said information packet (105 in FIG. 6);

determining whether said destination address exists in a local search block of said port (110 in FIG. 6);

determining whether said destination address is the same as a source address (120 in FIG. 6); and

transmitting said information packet to said destination address if said destination address is in said local search block of said port and is not the same as said source address (160 in FIG. 6).

6. (Original) The method of claim 5, further comprising the step of rejecting said information packet if said destination address is the same as said source address (125 in FIG. 6).

7. (Original) The method of claim 5, further comprising the steps of:

notifying a main search block if said destination address is not found in said local search block of said port (130 in FIG. 6);

performing an internal search by said main search block to find said destination address (135 in FIG. 6);

updating said local search block of said destination address if said main search block comprises said destination address (155 in FIG. 6); and

transmitting said information packet to said destination address (160 in FIG. 6).

8. (Original) The method of claim 7, further comprising the steps of:

sending no-port information from said main search block to said port device if said main search block does not comprise said destination address (145 in FIG. 6); and

broadcasting said information packet to all ports in said ethernet switch by said port

device (150 in FIG. 6).

9. (Original) The method of claim 7, further comprising the step of aging, wherein said main search block purges addresses that have not recently been used (157 in FIG. 6).

10. (Original) The method of claim 8, further comprising the step of address learning, wherein said main search block adds said destination address to its address table (143 in FIG. 6).

Claim 11. (Canceled)

12. (Previously Presented) The apparatus of claim 1, each of said plurality of local search blocks being configured to broadcast said input packet to all of said plurality of ports when in receipt of said "no port" signal from said main search unit (page 10, lines 5-10).

13. (Previously Presented) The apparatus of claim 1, said plurality of local search blocks being configured to compare said destination address of said received input packet with addresses stored in a table within using a hash algorithm (page 8, line 17 - page 9, line 5).

14. (Previously Presented) The apparatus of claim 1, each local search block being configured to filter all received input packets that have a destination address the same as its own

port (page 9, lines 5-10).

15. (Previously Presented) The apparatus of claim 2, the address sorting logic and the control logic being configured to determine whether the source address and the destination address of a received input packet are the same and the address sorting logic and the control logic being configured to filter a received input packet when the source address and the destination address are the same (page 8, line 17 - page 9, line 10).

16. (Previously Presented) The apparatus of claim 2, said address sorting logic and said control logic being configured to perform a hash algorithm for said classifying the ethernet address into groups (page 8, lines 19-20).

17. (Previously Presented) The method of claim 5, further comprising filtering said information packet when said destination address is the same as the source address (125 in FIG. 6, page 9, line 7).

18. (Previously Presented) The method of claim 5, said transmitting occurring only when the destination address is not the same as the source address (160 in FIG. 6).

19. (Previously Presented) The method of claim 5, said broadcasting occurring only when said main search block does not comprise the destination address (150 in FIG. 6).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-3, 12-13 and 16 have been finally rejected under 35 U.S.C. 103 (a) as being unpatentable over US Pub 2002/0051450 to Ganesh et al in view of US Patent 5,802,278 to Isfeld et al. Claims 5-7, 9 and 17-18 have been finally rejected under 35 U.S.C. 103 (a) as being unpatentable over Ganesh '450 in view of USP 5,138,611 to Carn et al. Claims 8, 10 and 19 have been finally rejected under 35 U.S.C. 103 (a) as being unpatentable over Ganesh '450 in view of Carn '611 and further in view of USP 5,802,278 to Isfeld et al.

VIII. ARGUMENT

1. Regarding the rejection of claims 1-3, 12, 13 and 16 using Isfeld '278, Appellant submits that there is insufficient motivation, as per MPEP 2143 to combine Isfeld '278 with Ganesh '450 to reject Appellant's claims. Appellant further submits that the motivation supplied by the Examiner in the Final Office action is blatantly faulty. Appellant further submits that one having ordinary skill in the art would not be inclined to turn to Isfeld '278 to fill in for the deficiencies of Ganesh '450.

In the rejection of claims 1-3, 12, 13 and 16, the Examiner relies on Ganesh '450 for a teaching of every feature except for a teaching of the 1) sending of the "unknown" signal (no-port signal) from the central table to the port when the central table does not have the destination address of a packet stored in its memory and 2) a broadcasting of the packet by a port to all other ports when an address not found in the central table. In Paper No. 8 (the Final

Office action), the Examiner then relies on columns 38 and 52 of Isfeld '278 for a teaching of these features. The Examiner, at the bottom of page 4 of Paper No. 8, justifies the combining of Isfeld '278 with Ganesh '450 by stating that the motivation to combine "is to allow the port that requests the destination address search to flood the frame only when no port number is found from the central bridging routing table so that each of the other ports will determine if its own port is the next correct port to use to receive the frame, otherwise if the local port will direct the frame to the corresponding port found from the central routing table." Appellant disagrees.

Appellant first notes that Ganesh '450 *also teaches* flooding or broadcasting to all ports at the middle of paragraph 0030. Therefore, Appellant submits that there is no need to again broadcast the packet to all ports when broadcasting already occurs in Ganesh '450. Because the broadcasting is already done in Ganesh '450 Appellant submits that there is no further need to broadcast so that "other ports will determine if its own port is the next correct port to receive the frame" as alleged by the Examiner on the bottom of page 4 of Paper No. 8. Appellant submits that from the flooding of Ganesh '450 and without the Isfeld '278 reference, the ports will still be able to determine if it is to receive the packet in question, thus negating the need to turn to Isfeld '278 to do what has already been done in Ganesh '450. Because the motivation supplied by the Examiner on page 4 of Paper No. 8 to combine Isfeld with Ganesh is not credible, the 35 U.S.C. 103 rejection to claims 1-3, 12, 13 and 16 can not stand.

Appellant further submits that the Examiner is applying hindsight reconstruction in the rejection of claims 1-3, 12, 13 and 16 by using Appellant's claimed invention as a blueprint from which the Examiner picks and chooses different features from Ganesh '450 and Isfeld '278 to arrive at Appellant's exact invention. In Paper No. 8, the Examiner never explains why Appellant's exact invention would result if Isfeld '278 were to be combined with Ganesh '450.

Appellant teaches that if the local port does not have the destination address, the central table is consulted, and only when the central table does not also have the destination address for the packet does the local port broadcast the packet to all ports. Ganesh '450 teaches that the broadcasting to all ports occurs when the local port does not have the destination address and before the central table is accessed. Isfeld '278 teaches that the local port is first consulted, and if the destination address is not found, the central table is then consulted, and only when the central table also does not have the destination address is the packet is broadcasted. Appellant submits that there is no motivation present as to why one having ordinary skill in the art would modify Ganesh '450 using Isfeld '278 in such a way as to change when the broadcasting is to occur and to change the conditions when broadcasting is to occur so that Appellant's exact invention results. Further, Appellant submits that the motivation supplied by the Examiner on the bottom of Page 4 of Paper No. 8 does not explain why the broadcasting should happen after the central table has been accessed and found not to contain the destination address instead of before when the central table is accessed. Therefore, the rejection of claims 1, 2, 3, 12, 13 and 16 cannot stand.

Appellant further submits that one having ordinary skill in the art would not be inclined to turn to Isfeld '278 to fill in for the deficiencies of Ganesh '450. Ganesh '450 pertains to saving memory by providing each port with a custom made list of destination addresses to store in a memory and a method of managing these lists. Isfeld '278 pertains to a bridge router that can connect together different types of networks by internetworking and allowing for the interconnection of diverse input/output modules. Appellant submits that one having ordinary skill in the art would not be inclined to turn to a reference that pertains to providing for interconnection of diverse networks and diverse input/output devices to fill in for the deficiencies of a reference that is about economizing memory space by managing data in a memory space. Because of this, the rejection of claims 1, 2, 3, 12, 13 and 16 must be withdrawn.

2. Regarding the rejection of claims 5-7, 9 17 and 18 using Carn '611, Appellant submits that there is insufficient motivation, as per MPEP 2143 to combine Carn '611 with Ganesh '450 to reject Appellant's claims. Appellant further submits that the motivation supplied by the Examiner in the Final Office action regarding loopback mode is entirely without merit. Appellant further submits that one having ordinary skill in the art would not be inclined to turn to Carn '611 to fill in for the deficiencies of Ganesh '450.

In the Final Office action, the Examiner relies on Ganesh '450 for every feature except the filtering of packets when the source and destination addresses are the same. The Examiner

turns to FIGS. 25 and 26 (esp. Col 33, lines 1-10) of Carn '611 for a teaching of this feature. Then, on page 10 of the Office action, the Examiner justifies the use of Carn '611 to fill in for the deficiencies of Ganesh '611 by stating, on page 10 of Paper No. 8 that such filtering of packets where the source and destination addresses are one of the same prevents routing in a loopback mode. Appellant disagrees.

Appellant submits that loopback mode is separate from and entirely unrelated from when the source and the destination addresses of a packet are the same. Loopback mode is merely a test mode where a destination port sends a reply to the source indicating that the message was received by the destination port and thus the destination port is functioning properly. Loopback mode does not necessarily occur when the source and the destination addresses of a packet are the same. The filtering of packets where the source and destination addresses are the same does not imply in any way that the destination port is in a loopback mode.

In lines 1 through 10 of column 33 of Carn '611 describe a validating procedure for a message. In this paragraph are listed three possible reasons to invalidate a message. One reason is when the source and destination addresses are the same. A second is when the destination address is in loopback mode. The third reason is when the destination address does not exist. There is no teaching anywhere that states that loopback mode occurs when the source and destination addresses are the same. Further, an understanding of "loopback mode" would show that loopback mode has absolutely nothing to do with the situation where the source and

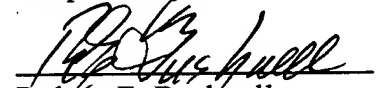
destination address for a packet are the same. Appellant submits that Carn '611 states that loopback mode is a separate reason for invalidating a message than the source and destination addresses are the same. Because the Examiner failed to provide, in Paper No. 8, a credible motivation to turn to Carn '611 to fill in for the deficiencies of Ganesh '450, the rejection of claims 5-7, 9 17 and 18 must be withdrawn since there is no prima facie 103 rejection.

Appellant further submits that one having ordinary skill in the art would not be inclined to turn to Carn '611 to fill in for the deficiencies of Ganesh '450. Ganesh '450 pertains to look up tables in a memory in a switching device. The look-up tables have destination addresses stored therein. In Ganesh '450, each port has a memory with a look-up table, and the entries for each port are unique based on past usage of that port. Ganesh '450 seeks to save on memory space by customizing the entries stored in the memory at each port. Carn '611 pertains to a coupler used in a computer network, the coupler having junctors that decide which channel will be used to forward information on to a destination. In Carn '611, if the destination channel is busy, a request to retransmit is put in a queue and then retransmitted when the channel becomes free. Appellant submits that one having ordinary skill in the art would not be inclined to turn to a reference about a coupler that seeks channels to send a packet to fill in for a reference that pertains to saving memory space by managing entries in a table stored in memory. The goals these two references seeks to save are so diverse that there is no credible reason to combine them with each other.

Appellant further submits that Carn '611 does not pertain to memory conservation or to look-up tables. Carn '611 never even teaches the existence of look up tables containing destination addresses. Carn '611 seeks to solve a problem entirely unrelated to that of Ganesh '450. In addition, Ganesh '450 does not pertain to and never even mentions different channels used to forward messages to a destination. Ganesh '450 also does not disclose a central coupler with junctors that select channels to send packets to their destinations. Ganesh '450 further does not mention what happens when a channel is busy. This is because the purpose and construction of Ganesh '450 and Carn '611 are entirely unrelated. Because of the complete dissimilarity between Carn '611 and Ganesh '450, the rejection of claims 5-7, 9 17 and 18 cannot stand.

In view of the law and facts stated herein, as well as all of the foregoing reasons, Appellant believes that the rejection is improper, and respectfully requests that the Board refuse to sustain the outstanding rejection of claims 1-3, 5-10 and 12-19 under 35 U.S.C. 103.

Respectfully submitted,



Robert E. Bushnell,
Attorney for the Appellant
Registration No.: 27,774

1522 "K" Street N.W.,
Suite 300
Washington, D.C. 20005
(202) 408-9040

Folio: P56257
Date: 10/24/05
I.D.: REB/ML

VIII. APPENDIX

CLAIMS UNDER APPEAL (Claims 1-3, 5-10 and 12-19)

1. (Previously Presented) An address search apparatus in an ethernet switch, said apparatus comprising:

a plurality of ports;

a plurality of local search blocks corresponding to each of said plurality of ports, each of said plurality of local search blocks configured to analyze a destination address of an input packet received in the port thereof and to search for a transmission port of said ethernet switch and provide a source address thereof;

a main search unit configured to analyze said source address to establish an address data structure of said plurality of local search blocks, said main search unit also configured to respond to a destination address request from at least one of said plurality of local search blocks by either providing said requested destination address to a corresponding local search block by using said address data structure when said main search unit has said destination address or by sending a "no port" signal to said at least one of said plurality of local search blocks when said main search unit does not have said destination address; and

a scheduler for controlling said local search blocks and said main search unit to enable an interface therebetween.

2. (Previously Presented) The address search apparatus according to claim 1, each of said plurality of local search blocks includes:

a destination address table having destination addresses and destination information corresponding to said destination addresses which are matched therein;

a source address table having source addresses and source information corresponding to said source addresses which are matched therein;

an address sorting logic configured to classify an ethernet address into groups as many as necessary, and corresponding to each of said destination address table and said source address table;

a control logic for control of corresponding local search blocks; and

a register unit for temporal storage of data.

3. (Original) The address search apparatus according to claim 1, said main search unit includes:

an address table for storing addresses known to the ethernet switch system and port information corresponding to said addresses;

a table access logic for accessing said address table;

an address sorting logic for classifying addresses having same characteristics to store data known to the ethernet switch system into said address table; and

a control unit for control and condition detection of elements.

Claim 4. (Canceled)

5. (Original) An address search method in an ethernet switch, said method comprising the steps of:

determining whether or not a port has received an information packet for transmission;

reading a destination address from a header of said information packet;

determining whether said destination address exists in a local search block of said port;

determining whether said destination address is the same as a source address; and

transmitting said information packet to said destination address if said destination address is in said local search block of said port and is not the same as said source address.

6. (Original) The method of claim 5, further comprising the step of rejecting said information packet if said destination address is the same as said source address.

7. (Original) The method of claim 5, further comprising the steps of:

notifying a main search block if said destination address is not found in said local search block of said port;

performing an internal search by said main search block to find said destination address;

updating said local search block of said destination address if said main search block comprises said destination address; and

transmitting said information packet to said destination address.

8. (Original) The method of claim 7, further comprising the steps of:

sending no-port information from said main search block to said port device if said main search block does not comprise said destination address; and

broadcasting said information packet to all ports in said ethernet switch by said port device.

9. (Original) The method of claim 7, further comprising the step of aging, wherein said main search block purges addresses that have not recently been used.

10. (Original) The method of claim 8, further comprising the step of address learning, wherein said main search block adds said destination address to its address table.

Claim 11. (Canceled)

12. (Previously Presented) The apparatus of claim 1, each of said plurality of local search blocks being configured to broadcast said input packet to all of said plurality of ports when in receipt of said "no port" signal from said main search unit.

13. (Previously Presented) The apparatus of claim 1, said plurality of local search blocks being configured to compare said destination address of said received input packet with addresses stored in a table within using a hash algorithm.

14. (Previously Presented) The apparatus of claim 1, each local search block being configured to filter all received input packets that have a destination address the same as its own port.

15. (Previously Presented) The apparatus of claim 2, the address sorting logic and the control logic being configured to determine whether the source address and the destination address of a received input packet are the same and the address sorting logic and the control logic being configured to filter a received input packet when the source address and the destination address are the same.

16. (Previously Presented) The apparatus of claim 2, said address sorting logic and said control logic being configured to perform a hash algorithm for said classifying the ethernet address into groups.

17. (Previously Presented) The method of claim 5, further comprising filtering said information packet when said destination address is the same as the source address.

18. (Previously Presented) The method of claim 5, said transmitting occurring only when the destination address is not the same as the source address.

19. (Previously Presented) The method of claim 5, said broadcasting occurring only

when said main search block does not comprise the destination address.